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Published by the Wireless Institute of Australia, Victorian Division,
478 Victoria Parade, East Melbourne, C.2.
Postal Address: P.O. Box 36, East Melbourne, C.2, Vic.

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ADVERTISING REPRESENTATIVE:

BEATRICE TOUZEAU,
96 Collins St., Melbourne, C.1.
Telephone: MF 4505.

PRINTERS:

"RICHMOND CHRONICLE,"
Shakespeare St., Richmond, E.1.
Telephone: JB 2419.

MSS. and Magazine Correspondence
should be forwarded to the Editor,
P.O. BOX 36,
EAST MELBOURNE, C.2, VIC.,
on or before the 8th of each month.

Subscription rate, in Australia and
Overseas, is 24/- per annum, in
advance (post paid).

Wireless Institute of Australia
(Victorian Division) Rooms' Phone
Number is JA 3535.

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7135 Kc. Individual frequency checks
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VK1WI: Sundays at 1000 hours EST, on 7146
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taken on 7115 Kc.

EDITORIAL

As previously covered in our
Editorial of Nov. 1958, the W.I.A. is
concerned about the implications of
interference by the various com-
munication services to t.v. viewers.
The particular problems confronting
the Amateur were stated in some
detail, and arising from this matter,
it was considered that a "get-
together" of t.v. manufacturers, pub-
lic utilities and other interested par-
ties and chaired by the P.M.G.
might be a way of finding a solution
to the current problem. To this end,
the Federal Executive approached
the Department with the request to
hold a preliminary meeting. This
meeting was subsequently held just
prior to Christmas and attended by
members of Executive and officers
of the Department.

The particular problems which
had been encountered by Amateurs
were stated and some recent in-
stances of t.v.i. troubles presented.
It soon became apparent that there
was no quick or easy answer. Dur-
ing discussion, the approach by the
R.S.G.B. to the British Post Office
and the results of their representa-
tions were explained. The W.I.A.
required, if possible, an answer along
the same lines given by the B.P.O.
to the R.S.G.B.—a clear statement
setting out formal rules for the
guidance of Amateurs in a proceed-
ure to use in the case of complaint.

The officers of the Department
were sympathetic and appreciative
of the problems involved and agreed
to investigate the matter further
with a view to evolving a clear
procedure for the channelling and
handling of complaints. Such a pro-
cedure would go a long way towards
satisfactorily dealing with any com-
plaint made and would also be a
guide to the individual in his public
relations with the complainant.

This, of course, is not the complete
answer. There are many involved

cases where no one can be honestly
blamed for t.v.i. This raises another
aspect which must be eventually
tackled. Where does the t.v. viewer
or the Amateur stand in such a
case? The t.v. viewer must be
diplomatically made to realise that
there are other users of the ether
who have equal or perhaps better
rights than himself. We are not
suggesting the Amateur is the right
person to point out this fact. This
can only be done by a responsible
Government body and by gradual
education of the public to accept the
idea.

The recent formation of T.V.I.
Committees in the Divisions will
greatly assist in the overall problem,
particularly from the aspect of giv-
ing expert technical advice to the
Amateur in trouble. Technical
articles by these committees in "Am-
ateur Radio" will also serve a useful
purpose in the best ways to t.v.i.
proof transmitters. A constant flow
of cases from these bodies to the
Executive will help maintain a use-
ful liaison with the Department, to
our mutual benefit. Another avenue
vitaly interested in the associated
problems is the Standards Associa-
tion of Australia who have a num-
ber of active working committees
engaged in examining cases and lay-
ing down standards for adoption by
manufacturers of equipment of
potential interference sources.

Above all, the Amateur must be
patient and forbearing for the
moment, knowing that there are
many problems yet to be solved in
this new medium. He can, however,
rest assured that he has not been
forgotten and that his is not the
only problem confronting the auth-
orities. The early prospect of a
clear procedure for the handling of
complaints is the forerunner of sim-
ilar measures, we hope, to make the
air waves livable for all.

FEDERAL EXECUTIVE

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Mobile, the Economical Way

H. F. RUCKERT,* VK2AOU

THE September issue of "Amateur Radio" brought a proposal by the writer discussing the possibilities of how we can use high gm valves in mobile equipment without a h.t. supply by using the 12-14 volt car battery also for the plate and screen grid. We are now discussing a car radio which was recently successfully built using this proposal. Recently, several publications have described similar circuits, but the so-called special hybrid 12v. valves were used in these cases, and coil winding data were not given.

If you have enough space in your car, you can buy six of the popular EF50 type valves for ten shillings, or you may even get the valves cheaper from disposals, and these will work most satisfactorily. But if you wish to fit the car radio into the limited space provided by the car manufacturer, you will have to use miniature glass valves of more recent origin.

We are all very familiar with the usual radio receiver where the negative pole of the supply is earth or connected to the car chassis. But many modern cars have the positive pole of the car battery connected to the chassis, and it may therefore be more interesting to show the circuit suitable for this case. The writer's car was of this type also. At first it may seem strange that we have to connect the screen grid to chassis to get B+ (12-14v.) on this electrode, but it works just as well. The writer used the valves he had available or could swap against other components.

The r.f. stage uses a Western Electric v.h.f. valve, type 5847, with a gm of 12.5 mA/V, but a 6AG5 or 6AU6 would have done the job nearly as well.

Valves with a high gm and operated with only 12v. on the screen grid, require only a fraction of a volt as grid bias. If an indirectly heated valve is operated with a high grid 1 resistor, the faster electrons pass the space charge and can land on the control grid, forming a negative bias of -1.5v. By reducing the grid leak resistor, we can adjust the bias to the required value. Too large a resistor and too high bias will cause the valve to operate in class C and distortion results. The stage gain will also be low by working with a too low dynamic gm.

By the same reason we can only connect the a.g.c. voltage to one, or at the most two stages, or it will cut the receiver off too soon and a far too low sensitivity will result. A mobile receiver requires a good a.g.c. and it is interesting to see that this circuit can handle nicely signals between 10 μ V. and 1 volt with a.g.c. only at the mixer stage, which has a remote cut-off characteristic, whilst the other valves are of the sharp cut-off variety.

The aerial coupling, the grid and plate tuned circuits are of conventional design with a trimmer in parallel with each coil. A small three-gang air dielectric variable capacitor is used. A

6BA6 valve serves as mixer with a separate oscillator. The bias comes from the grid current of the mixer and the diode current of the a.g.c. diode via the resistors of the a.g.c. line.

A high gm triode oscillator valve helps to get stable oscillation over the tuning range. One half of a 6J6 is used, but a 12AT7 valve would have been just as good (not a 12AX7).

Only the heater circuit has to be changed if different valves are employed. The identical heaters of the r.f. and mixer stage are in series. The 6J6 needs 0.45 amp. heater current; a 42 ohm resistor, which is in parallel with the 6J6 heater, brings the current to 0.6 amp. In series with this set-up are the two parallel heaters of the i.f. and 1st a.f. valve, to form the second heater chain with 12 volts. The total heater current drain is therefore 0.9 amp.

The mixer cathode had to be connected to the centre tap of the oscillator coil to prevent too much damping of the oscillator and limiting of the oscillator voltage at the mixer grid to the required value.

The cold end of the air capacitor and of the feed back coil are to the chassis and on B+. Small ferrite pot core coil assemblies are used which have one slug and only enough winding space for one coil of the i.f. filters each.

The simplest way to get the necessary coupling effect between the two tuned circuits of each band filter is capacitive coupling. Very small coupling capacitors of about 2 pF. would be required if the hot ends of the filters (plate and grid) would be coupled together. Therefore centre taps were provided on all i.f. coils and this allows the use of 8-12 pF. as coupling capacitors, which makes it easy to adjust the bandwidth of the i.f. stage.

The i.f. stage again uses a high gm valve, type 6AM6, but a 6AG5 or 6AU6 would have given nearly the same gain. There are also now available various fine t.v. set i.f. strip valves with high gm and sharp or remote cut-off characteristics, which could be used right through this or similar receivers including Amateur band converters.

The two diodes and the first a.f. triode of the 6AV6 work in the usual way. If the a.g.c. voltage tends to be too high and blocks the receiver, a smaller coupling capacitor than 60 pF. may be used. The grid leak resistors, determining the bias, operation and output of the a.f. stages, had to be reduced to bring the distortion free output and drive far enough up.

The 100 pF. capacitor at the grid of the second half of the 6J6 valve reduces stray oscillator voltage and acts as a fixed tone control at the same time.

The B—line filter consists of a 50 ohm $\frac{1}{2}$ watt resistor and a 100 μ F. miniature electrolytic capacitor. The total plate and screen grid current of the receiver is in the order of 5 mA.

In the final a.f. stage an OC16 transistor was employed. The circuit of this stage uses the recommendations of the transistor manufacturer with good re-

sults. The input transformer is a step-down type with the ratio 23:1. A 1.3 ohm resistor fixes the base voltage to about 1.2 volts. This resistor reduces the heater voltage to 12-13 volts because battery voltage reaches 14 volts if the generator is charging. At the same time, the voltage divider formed by the 1.3 ohm resistor and the heater chain keeps the base voltage within close limits.

The emitter current passes through a copper wire wound resistor of 1.8 ohms. About 6 feet of 38 s.w.g. copper enamel insulated wire can be wound on a 2 watt resistor body. The temperature co-efficient of the copper wire prevents the transistor running away at high operating temperatures, and this should assure a long useful life.

Of the 6 watts the transistor consumes, 2.5 watts are available as a.f. power output with low distortion (10% distortion at 2.9 watts output). It is quite obvious that we can rarely use more than half the maximum available power, and most likely a smaller transistor such as the OC30 would be sufficient.

A 3" x 10" loudspeaker would have fitted nicely in the space provided by the car manufacturer, but a t.v. type of 4" x 5" was available.

A 2 amp. fuse is recommended so that a short circuit in the radio will not blow out the 35 amp. accessory fuse in the car. The total power consumption amounts to 20 watts only. This is nearly one-third of the battery drain some vibrator type car radios take. In other words we have saved the power for a short wave converter and a small mobile transmitter.

No attempt had been made to build the receiver as small as possible, so the available space was used. The upper part of the circuit including all valves and associated components was mounted on a chassis of 6" x 7", which was $\frac{3}{8}$ " high. This part of the set is in a shielded case 3" high. The loudspeaker was mounted, as recommended by the transistor manufacturer, on a wooden baffle and covered around the back by an aluminium heat sink, carrying the transistor, transformers and the other components shown on the lower part of the circuit. If the air vent is opened, when driving in warm weather, the stream of fresh air reaches the heat sink and transistor under the dash board too. A four-core cable connects the two receiver parts with each other.

These circuit features have been mentioned in detail because they may be useful if a s.w. or v.h.f. converter is added and the car radio acts as double i.f. and a.m. amplifier or if a transmitter v.f.o. and modulator is planned.

This type of circuit with 12-14 volts is quite simple and very economical to build and operate.

In many mobile installations the useful gain and sensitivity of receivers is not so much limited by the valve noise (effective gm) than by the interference caused by the car's ignition system and other electrical apparatus

* 25 Berrille Road, Beverly Hills, N.S.W.

plus the electrical interference caused by other road users, therefore we do not loose much by having only a fraction of the gm: the valves would have at 100 to 250v. B+.

The components used are of the types made for transistorised receivers. All resistors, with the exception of the two at the transistor, are of the one-tenth to one-quarter watt type. All capacitors, up to and including the 510 pF. padder capacitor, are of the NPO K factor 32 version, which have practically no temperature drift and their P.F. is 0.03%, which is better than most mica capacitors. The three trimmers are disc ceramic types. With the exception of the four 6 and 12v. electrolytic capacitors, all other coupling and bypass capacitors are ceramic K factor 9000 types, which have a capacity maximum at the operating temperature. The ceramic dielectric of the NPO and K 9000 is only 0.008" thick, therefore these capacitors require less space than other types.

Ducon Condenser Ltd. now make locally a very small ferrite pot core coil assembly which is very easy to use and its small size makes it ideal for car radios, transistor portable equipment, etc. The high Q values obtainable make this coil also attractive for all receiver applications. The complete assembly measures, with can and slug, only 3/8" high and the chassis space required is only slightly more than 3/4" square.

The high permeability of the Q-type ferrite and the high effective perme-

ability of the pot core assembly calls only for relatively few turns. The turns are very small and so not much copper wire is required, resulting in low ohmic losses in spite of the relatively fine wire, if 100 turns have to be used.

All these factors bring a high Q about usually not found on much larger so-called miniature coils.

The following simple formula may be used to work out the number of turns required to get any inductance from 0.8 µHy. to 800 µHy.:

Turns = $3.7 \times \sqrt{\text{Inductance in } \mu\text{Hy.}}$
(with slug fully-screwed in).

The temperature coefficient of the coils is small and the radio does not show any frequency drift with changing temperatures. The receiver sensitivity is uniform over the entire range.

COIL TABLE

	Turns	µHy.	Q
Aerial coil	15	13.4	—
R.f. stage grid coil	55	200	112-132
Mixer grid coil	55	200	136-150
Oscillator coil	40	100	75
Feedback coil	20	25	—
I.f. coil	100	600	160

The ferrite slug allows an inductance variation of ± 15%. A metal screw driver can be used for alignment. The screw driver slot goes through the whole slug, so the slug can be adjusted even when the top end is broken out. If the abovementioned formula is used the slug allows a reduction of the maximum inductance by nearly 30% (25% with the first turn).

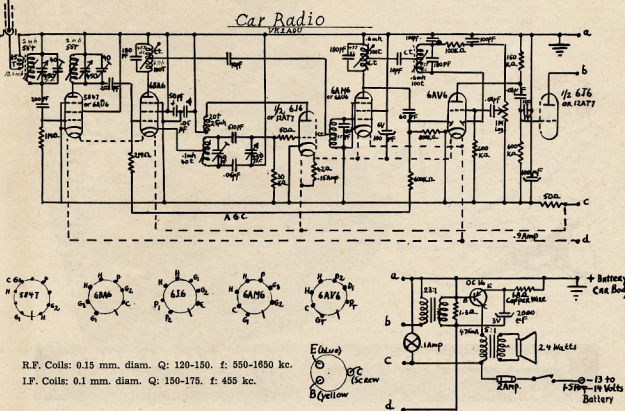
For the i.f. coils, 42 s.w.g. copper enamel insulated wire was used. For the other coils, 38 s.w.g. copper enamel insulated wire was used.

Due to the fact that there is no vibrator and a.c. power supply, the receiver works absolutely quiet. With the receiver not tuned to a station and the car engine off we can just hear the front end noise of the receiver due to the overall high gain with the volume control wide open. Starting the car showed S5 ignition noise. Installing a noise suppression capacitor at the ignition coil where the cable goes to the starter switch reduced the noise to S3, which is equal to the engine noise in top gear, but this level is often below the tyre road noise figure.

Country stations can be received in Sydney with the whip aerial only two feet long and the a.f. volume only half open—and ignition noise does not exist. Therefore no further steps were necessary to reduce the ignition noise. All high tension cables between the ignition coil, the distributor and the spark plugs have a resistor thread instead of a copper wire as conducting core. The cable between the ignition coil and distributor measures 20,000 ohms. This type of h.t. wire seems to suppress ignition noise very successfully, because neither an aerial hash coil nor a B—r.f. filter was required.. The car is a well looked-after Vauxhall Victor.

LITERATURE

"Mullard Outlook," May-June 1958.
"Radio, Television and Hobbies," June 1959.



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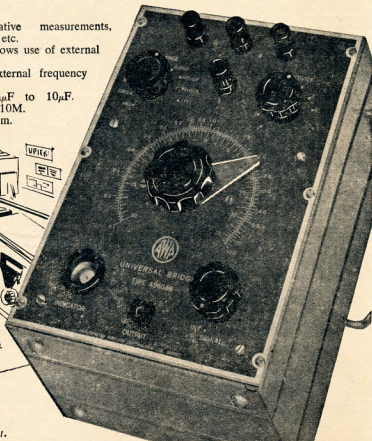


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A V.F.O. for Six Metres*

FLEXIBILITY FOR THE ROCKBOUND V.H.F. MAN

THOMAS BECKAGE, W3LCK

EVER since thousands of crystals in the range between 8350 and 8550 kc. were released on the surplus market some years ago the 6 metre band has had a series of pileups at 50.1, 50.25, 50.4 Mc. and so on up through the band. If you have wished for an inexpensive way to avoid being rock-bound on these popular channels you may be interested in the v.f.o. described here. It is simple and economical to build, having been designed for the 6 metre job only.

CONSTRUCTION

A 5" x 6" x 2" chassis provides plenty of space for the v.f.o., and may even include a built-in power supply, if desired. Because of heat and vibration problems the power supply may introduce, it is recommended that the supply be made external to the v.f.o. It goes without saying that the power source should be well filtered. A small supply will suffice, as only 150 to 175 volts d.c. at 20 to 30 mA., and 8.3 volts a.c. at 0.3 amp. will be required. Small power transformers such as are commonly used in t.v. boosters and converters are ideal for this purpose. The full wave centre-tapped type is recommended.

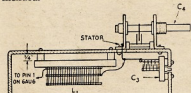


Fig. 1—Arrangement of the coil and tuning capacitors in the 6 metre v.f.o. Be sure that the access hole in the front panel for C3 will not be covered after mounting the main tuning dial on C4.

Except for the mounting of L1, C3 and C4, there is nothing critical about the construction of the v.f.o. The coil, L1, is constructed by cementing a full length of B. & W. Miniductor No. 3007 to a block of polystyrene 1" x 3" x 1/4" in size. Use a good quality coil dope. Clamp the coil in place with one rib in contact with the block. Flood the contact area with cement and allow it to dry. Then repeat the application of cement and allow the assembly to dry overnight. Drill the ends of the block for mounting, as shown in Fig. 1. Connection to the coil should be made by unwinding a portion of the coil at either end, to get enough wire for the leads.

CIRCUIT

As may be seen from Fig. 2, the v.f.o. circuit is about as simple as it can be and still do the job. The popular series-tuned Colpitts circuit is used, with the grid of the 6AU6 oscillator on 12.5 Mc.

to 13.5 Mc., for coverage of the band. The plate circuit is on 25 Mc. The v.f.o. is intended for use with transmitters in which the first stage is an oscillator-triplexer for 8 Mc. crystals. The coupling method shown converts the first stage to a straight-through amplifier on 25 Mc., so a 4,700 ohm swamping resistor is placed across L2 to minimize the tendency to spurious oscillation in this stage. The resistive loading also broadens the response of the oscillator, so that one setting of the slug in L2 will suffice for coverage of the first megacycle of the band.

The output cable used is RG-62/U. Other types of cable can be used, but variations in capacitance may make a change in the number of turns in L2 necessary. The outer conductor of the cable should not be relied on for a bond between the transmitter and the v.f.o. Use a separate piece of copper braid or strap to bond the two together, and make it as short and direct as possible.

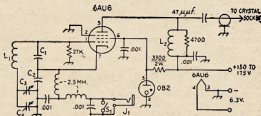
may now be checked by following the frequency change with the receiver. With the capacitor value given for C4 the range will be about four megacycles at 50 Mc. If greater tuning range is wanted, use a larger capacitor for C4. For a smaller tuning range, remove one plate from C4, and use slightly more capacitance in the padder, C3.

If initial checks are made with the v.f.o. before it is mounted in its case, a slight readjustment may be necessary when it is boxed in. Allow 15 to 20 minutes for warm up before making final frequency adjustments.

With a 26 inch length of RG-62/U cable connected between the output of the v.f.o. and the crystal socket of the transmitter, peak the slug in L2 for maximum output from the driven stage. If a peak cannot be reached with the slug, turns will have to be added to or removed from L2.

Though a jack is shown in the cathode lead, keying of the transmitter will probably be done in a later stage.

Fig. 2—Schematic diagram and parts information for the 6 metre v.f.o. Capacitors other than C1-4 are ceramic. Resistors 1/2 watt unless specified.



GROWING PAINS . . . S.W.L. VARIETY

THE Short Wave Listeners are an essential part of the Amateur Radio set-up in this or any other country. But there are many Amateurs who don't even acknowledge our existence. These words seem familiar, so they should, for I wrote them in a letter to "A.R." many months ago. Several weeks ago I overheard a remark on 40 metres, by a prominent Amateur, to the effect that he for one wanted nothing to do with listeners, either in person or in the form of a report. This set me thinking, and there and then I decided that something must be done to rectify this state of affairs which has, unfortunately, been in existence for far too long.

It was decided to contact a dozen Amateurs of varied professions, varied radio interests, and a similar number of listeners in an effort to obtain their views on the matter. This was done, and this article is compiled from those opinions, together with my own comments, trusting that a perusal of these lines will assist those who are at fault whether they be Listener or Amateur. And above all I trust that it will do something towards restoration of harmony in the fraternity.

Now, all things must begin somewhere, and it is the misfortune of the Listeners that this unenviable stage is of necessity connected with our section of the movement. Take the newcomer to radio as a hobby (and in this case I refer to the youngster not yet left school). He goes through the crystal set stage and slowly progresses until he, by design or accident, receives Amateur signals. He hears about QSL cards, which are to be had for the sending of a report and there it starts. Out go letters designed only to extract a card, not endeavouring to give the station a report of any value. The result is that over a period of years stations, particularly the very active DX men, get snowed under with worthless reports—thus is bred the ill-feeling which is so prominent these days.

I realise this sounds rather far fetched, but it has happened before and will happen again. Amateurs become annoyed, Listeners exasperated. Some reports which are sent out would have to be seen to be believed, for instance one shining example was sent to a prominent Amateur some time back. It went something like this, "Heard you on the air last night, please send me your card." It is to be said for this very fine gentleman that he did send the card, he verifies all reports regardless. He considers it common courtesy, besides encouraging the prospective Amateur along his preliminary path.

These remarks don't apply solely to the young lads. For I one did the same thing, and not very long ago. I sent out my first thousand card without a lot of thought, and was quite annoyed at the very poor response received. Fortunately the VK2 QSL Manager drew my attention to it and since adopting his suggestions my percentage has increased steadily.

From the general tone of letters I have received on the subject and from personal conversations I have had with

different Amateurs, it would seem that a very large portion of the blame is not with the Amateurs who don't answer reports—although there can be no excuse for the fellow who ignores receipt of a stamped envelope—but with we listeners who are sending out worthless reports. The subject of reporting won't be entered into in this article, but a composite article, embodying comments of many Listeners and Amateurs, is at the moment being compiled by the writer and will be submitted to "A.R." in the near future.

However, it is suggested that the various radio clubs, s.w.l. groups and what have you, apply a programme of education on the subject of reporting to all Listeners under their care, teaching them all facets of reporting and all matters pertaining to this, a most essential part of our hobby. By doing this, it will raise the standard of s.w.l.-ing in this country to the extent that we will be appreciated far more than we are now. Even if we can't change the opinions of the Amateurs who are against us, we can at least make them sit up and take notice.

How are we going to do this? Well here are a few simple rules gathered from far and wide, but regardless of their origin, if applied to our activities they will do a lot to assist our cause. Firstly, think before sending out a report. Have we given all the possible details? A full report must not stop with the date, time, band, RST, etc. Reporting is not as simple as that. I won't go into details here, I shall include them all in the second article. But remember the more details you give in the report, the more it will be appreciated and the greater the chance you have of getting a return card. Of course many stations don't QSL even to other Amateurs, in which case there is no hope for us, the humble Listener.



"... Antenna here is a long Yagi, I'm beaming in your direction . . ."

Having got to the stage of noting all the details for the report, we must then decide if the report will be of any use to the chap whom you have just logged. If the report does with a contact he has had with somebody in our locality, then be sure that the report is of little value to him. This applies more so to the DX man who under normal conditions works into our State. If propagation conditions are against him working in to our locality, then he most likely will be interested in our report.

When dealing with our local chaps, make sure before a report is sent that he is getting into your locality when all is against it. And above all, don't fail to report any unnatural condition connected with his transmission, for a critical report, provided the criticism is accurate, is of more value than a straight 5 by 9 to the transmitter. As far as I am concerned, I send cards only to VK mobiles, portables or any lower-powered distant stations. However, I occasionally want a particular card, in which case I send a stamped addressed envelope. In doing so, I have had the misfortune to discover that a few of our Amateurs are philatelists specialising in uncanceled current Australian issues.

Having decided to whom we send our card and the nature of the report, we are then faced with the task of deciding how we are to forward it. Should we want to send it direct we must choose either a S.A.E. or in the case of overseas stations, an I.R.C., obtainable at the post office, and exchangeable in most countries for a stamp. Don't send reports direct without the return postage. Costs of running a station are high, but to the DX men and a lot of our non DX chaps, QSL cards and postage costs far exceed the running costs of their station, so don't be annoyed if they don't send you a card.

Then of course there is the Bureau, without the aid of which we just could not get our cards out without a terrific postage bill, so we send most of our DX cards via this medium, also cards for VK city members who collect their cards from the Bureau. The country chaps are in a different position: although their cards are posted to them from the Bureau, they have to get their returns back there, and in cases of some not too active chaps, this requires postage of single cards.

Whilst on the subject of costs, I would like to quote a very prominent DX man who is faced with the problem of keeping up with s.w.l. cards. "How nice it would be if cards could be exchanged, but s.w.l. cards become an embarrassment as to cost with a lot of Amateurs. In my case it costs me more to send QSLs than to run my station. Now if all Amateurs answered s.w.l.s. the numbers would grow into a flood and finally make it impossible to keep up with them, no matter what your feelings in the matter. I know, because I was faced with the problem a few years ago. I now get about 100 Listener reports every year and answer every one. If it were not for the Bur-

eau, I would have to give up QSLing altogether, as I now send out about 2,000 cards every year. I do not QSL direct unless a coupon is sent; I could not afford it. QSLing can get out of hand, whether it be Amateur or Listener. I think that the person who makes a habit of collecting cards should be prepared to meet the cost." I think those opinions could be safely applied to most of the Amateurs, DX or otherwise.

As regards Listeners in general, popular opinion has it that we are a flock of embryo Hams, but this is far from being true. The fact is that listening is a study in itself, and the genuine Listener is a specialist in his own right. Who would deny that WIA-L3042, better known to the world as BERS-195, and whose name is near the top of QSL ladders the world over; G/7187 and W1/7959, both of whom have over 250 countries verified, are not specialists? You will say they are exceptions, well I can assure you they are only a few of the s.w.l.'s in the world who have their s.w.l. equivalent of the DXCC and are well over half way towards the second one. These chaps are experienced Listeners who can hold their own with most operators, and given this experience we can all emulate their feats.

I emphasise that experience is a must; given time and practice, we can all become specialists in this field, then if and when we get our tickets we have the advantage over the chap who comes in as a technician. Many of the present day Listeners have no intention of ever going on the air, but a lot will

—most of these being younger members who even at this stage are building their own gear. Their technical knowledge is fairly high and there is little doubt that they will get on the air when they are old enough. In the meantime it is up to those who are guiding them to teach them the finer points of operating procedure and reporting.

From the Listeners' point of view, the main worry seems to be the lack of appreciation of our efforts, which in my opinion is largely due to lack of publicity. Fortunately the publicity for VK2 and VK3 S.w.l. Groups is in capable hands and you can be sure that in the future you will hear a lot about the listeners in those Divisions. Other States would do well to follow these two progressive Groups. Most Listeners have nothing but praise for the Amateurs with whom they have had dealings, but they feel that there is an undercurrent of intolerance throughout the Amateur world. As I have endeavoured to point out, it is up to us as Listeners to do our job properly, and thus remove any cause for ill feeling towards us. As to the Amateurs who criticise those of us who are remaining s.w.l.'s, let them remember that it is up to the individual to choose the branch of radio which suits him, his education and his pocket.

Co-operation exists between the VK2 and VK3 Groups in a manner which may surprise many of the readers. The two very active Secretaries, myself and other members are in touch by letter or tape regularly, letters crossing sometimes two and three times a week on

matters of common interest. Each Division is running their own contests, whilst the N.S.W. Group have their own bulletin. Other Divisions can do the same, all they need is a little guidance from experienced Listeners or former Listeners (see Editorial, "A.R." Nov. '57), and some fresh ideas with a committee willing to put them into action. Increased activity was shown in the Listeners' Section of the R.D. for 1959, 48 entries were received, which is an increase of 11 on 1958. As well as this, 18 of the 1958 entries were absent from the 1959 event.

In conclusion I would like to thank the Publications Committee on behalf of all s.w.l.'s for the help they have given us, and for the additional space they have allotted to us. I would ask the individual Listener to respond by forwarding all information for publication in our column to either myself or Maurie, ensuring that the page is kept full.

"I would like to direct these closing remarks to every s.w.l. in Australia," comments Tim Mills, Secretary of the VK2 S.w.l. Group. "I know it is hard to run a S.w.l. Group, but we want your help to fill the gap in this section of our hobby. If there isn't a Group in your State, or if it is at a standstill, then it is your duty as a s.w.l. to correct it. Check with full members and the Council of your Division, work with them, and I am sure they will work for you. Every S.w.l. Group must work with each other for we are all part of the W.I.A."

—D. Granlley, WIA-L3022
Spring Valley, Holbrook, N.S.W.

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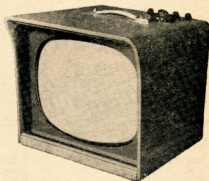
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A Foolproof S Meter*

AUXILIARY UNIT FOR SURPLUS AND OTHER RECEIVERS

H. O. LORENZEN, W3BLC

• Owners of surplus receivers and other receivers not equipped with signal-strength meters will be interested in this S meter unit. It is simple, easy to install and universally adaptable.

OVER the years I have tried many S meter circuits without very gratifying results. Some of the circuits resulted in the meter reading backwards, while others compressed the scale all in one short part of the meter's reading range. Most of these circuits used the usual 1 mA. meter in some form of a bridge circuit in the plate of a pentode.

This S meter uses the simple circuit shown in Fig. 1. It is the essence of simplicity and yet it has many features to make it foolproof for any application. By using a 0-200 microammeter (readily available from surplus), a better range of sensitivity is achieved over those circuits using a 0-1 milliammeter. R1 allows for a zero adjustment of the S meter to compensate for different levels of circuit noise.

lower S units, but likewise, the scale also accommodates readings up to 20 db. over 9. Beyond this I feel the reading is unimportant.

R3 and R4 in the cathodes of the 6SN7 are not critical but probably ought to be 10 per cent. resistors so R1 will balance near the centre of its range.

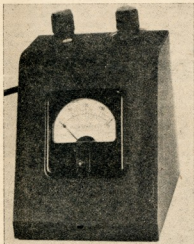
The B+ lead shown was connected to the screen supply on my BC348 which provided 125 volts. This gave about the right sensitivity. The same voltage could be obtained from a simple voltage divider across the plate supply with the 6SN7 plates tied to the centre point of the two resistors.

A photograph shows the meter mounted in a conventional sloping-front meter cabinet. As shown in the rear view, all the components are mounted on a 1/16 inch aluminium bracket which fits the back opening in the sloping panel cabinet. This aluminium bracket is held in the cabinet by the two extra nuts on the potentiometers. R1 is shown on the right with R3 and R4 mounted between the two end terminals and two phenolic stand-off bushings. The socket for the 6SN7 is mounted on two bushings slipped over mounting screws which support the socket from the base.

R2 has a pointer knob on it so it can be set to the correct value and marked for the various converter or receiver combinations. Wires for the power and a.v.c. connections are formed into a cable terminated with a 4-prong Jones plug. Shielded wire should be used for the a.v.c. connection. A covering

of black vinyl tubing gives the cable a professional finished look. By providing matching sockets for the cable plug, the S meter can be used on more than one receiver combination. Later I plan to use it on a Command receiver, Q5-er, also.

Operation of this unit has been extremely gratifying. After trying lots of circuits that required cutting and trying to get them to work suitably, I must report this unit worked the first time. It hasn't been necessary to make any modifications either. Calibration of the unit was arrived at by using the comparison method with two of the more reputable commercial receivers equipped with S meters. The two receivers didn't match each other when



The S meter is built into a sloping-panel cabinet, with the controls at the top. The one at the left is for R1. The skirted-knob at the right is for R2.

Some receivers have gain-adjusting circuits which have a major influence on the residual noise level in the a.v.c. circuit, but the adjustment of R1 permits compensation for these varying noise levels. The a.v.c. level control, R2, also permits the matching of the meter scale to the a.v.c. voltage.

When a converter or an extra r.f. stage is used ahead of any of the conventional S meter circuits, the scale no longer reads correctly. Not so with this circuit. All that is required is a simple readjustment of the a.v.c. level control R2 and the S meter again reads correctly.

A photograph shows the calibration scale on the 0-200 microammeter. Adequate spread is provided for the

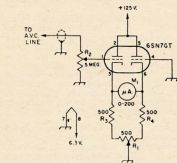
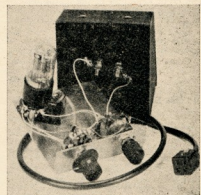


Fig. 1.—Circuit of the foolproof S meter. Resistances are in ohms and fixed resistors are ½ watt. R1 and R2 are potentiometers. M1 is a 0-200 d.c. microammeter. R3 and R4 preferably should have 10% tolerance ratings.



Interior view of the S meter showing the mounting of the 6SN7GT and the potentiometers R1 and R2.

the S meters were compared on the air. However, by adjusting R2, the a.v.c. level control, I could match the scale of either one extremely closely. That's the advantage of the controls. So, if you have been searching for a foolproof S meter circuit, I can't see how you could possibly go wrong using this one. I am sure some of the fellows using BC348s, BC342s and other combinations will appreciate this extremely versatile S meter circuit.

FRENCH CONTEST FOR 1960

The 1960 French Contest will be held as follows:

C.w., from 1300 GMT on Feb. 27 to 2100 GMT on 28th Feb. Phone, from 1300 GMT on April 9 to 2100 GMT on 10th April.

Contest exchanges will be as for the R.D. Contest (e.g. 579001 for c.w., and 57001 for phone) and increasing by one for each successive contact.

Scoring will be three points per contact. There will be no multiplier.

All logs must be forwarded within one month of the Contest to R.E.F., B.P. 42-01, Paris R.P., France. These logs are available for reference to any French Award. QSLs are not required for these QSOs.

SOME ABC's OF AMPLIFIERS*

ASK the average Radio Amateur or aboveaverage Electronic Technician to define a Class A, a Class B, and a Class C vacuum-tube amplifier stage and note his answer. In all probability it'll be this: "A Class A stage is one in which the tube is biased to the straight part of its Ec Ib curve; it doesn't draw grid current." "A Class B stage is one in which the tube is biased to cut-off; it draws some grid current." "A Class C stage is one in which the tube is biased to twice cut-off; it draws heavy grid current." Nothing wrong with this . . . as far as it goes.

Press him further, and you may pry out a few more facts. For instance, that a Class A stage often is used as a voltage amplifier; that, in r.f., a Class B stage can be used to amplify amplitude-modulated signals; that a Class C stage can be plate-modulated. Still correct, but still missing the point.

All these things are either examples of what these three classes of amplifiers can do or examples of the manipulations of stage parameters made in an effort to attain the desired status of operation.

Let's pause a moment and note the actual definitions of these classes of operation:

Class A: An amplifier stage in which the output waveform is identical to the input waveform.

Class B: An amplifier in which the power output varies as the square of the input voltage.

Class C: An amplifier in which the plate current rises in exact proportion to an increase in plate voltage.

With these definitions in mind, let's take them one by one and examine their capabilities and their limitations. For the sake of simplification, we shall confine ourselves entirely to radio-frequency applications.

Class A stages have been treated with such thoroughness by the technical press that little needs be said about them. Just keep in mind that their r.f. applications are determined by the same limitations and capabilities as their a.f. applications. Then all you need to do is to read any of the many articles written for audiophiles.

Class B stages are quite another matter. Not too much factual information on this is available unless one digs it out, piecemeal, from a number of engineering manuals. First, let's ask ourselves why should a person desire a stage in which the power output varied with the square of the input voltage? Is the Class B stage something painstakingly designed to perform some desired function? The answer is an emphatic "Yes." The true Class B r.f. stage was designed with one thought in mind: To produce an efficient (relatively-speaking) stage capable of amplifying an amplitude-modulated signal.

Being a vacuum tube, the stage's r.f. power generator primarily is a voltage-operated device; therefore, one approaches the design problem with the

consideration of having a voltage available to actuate the tube's grid. The amplitude of this voltage varies in accordance with the signal intelligence superimposed on the original carrier wave. Now let's start to nail down some of the things we must have in order to enable the stage to operate in the manner to satisfy our rigorous stipulated requirements. **Number one:** All voltages associated with the control grid must be of a "stiff" nature; that is, the voltages must not fall off if they are required to deliver power (sustain a current flow). Note that this requirement applies equally to both signal and bias voltages. Remember that the tube is biased (by an external voltage or by the tube's internal geometry design) to a condition approaching cut-off. Thus when signal voltage is applied, the plate current will increase. Let's mark down **number two:** The voltages associated with the plate (also the screen-grid and the suppressor-grid, where applicable) d.c. supply must be of a "stiff" nature.

We have seen that the plate current increases when a signal voltage is applied to the control-grid. We need, however, an increase in plate r.f. power . . . an increase related to the square of the grid voltage increase. Furthermore, this r.f. power must be developed from a constant-voltage plate power d.c. source. That leaves us with but two variables in the plate circuit (assuming "tank" losses to remain constant): The plate current and the vacuum tube "conversion efficiency." That latter term refers to the tube's ability to convert d.c. plate power input into r.f. plate power output. Happily, these two variables can be made to complement one another in such a manner as to achieve the desired results. Very roughly, it is somewhat like this: The tube functions as a very inefficient d.c. power converter at low r.f. grid voltages, and plate r.f. current variations are small, too; at high r.f. grid voltage the tube's conversion efficiency increases, and its plate r.f. current variations are large. By extremely careful adjustment of bias, r.f. grid excitation (which must be light), and plate loading (very heavy plate loading is required), a condition can be achieved in which the plate r.f. power output varies with the square of the control-grid r.f. voltage input.

Note that these three variables (bias, excitation, and loading) are all interdependent one upon another. In other words, when you adjust a Class B stage, you are solving a problem with three variables! Small wonder that so few are adjusted correctly, for unless you have rather extensive (and decidedly expensive) test equipment, you do not have an "answer book" to tell you when you have reached the correct solution.

Class C stages have been treated rather thoroughly in the technical literature. Much of the material, however, deals with telling how to adjust a stage, rather than why. Let's go back to the definition: Plate current varies directly with plate voltage. This, again, suggests that some very definite applications were in mind when such require-

ments were stipulated. Such is the case; this is the condition that permits plate modulation.

A review of some of the operational requirements is in order. Briefly, they are these:

1. High control-grid bias, preferable cut-off bias from a fixed source and additional bias to at least twice cut-off from "grid-leak" bias.
2. Sufficient r.f. excitation to drive the tube well into plate saturation.
3. A "stiff" plate d.c. power source.
4. A vacuum tube with very ample cathode emission (not a small tube worked to the limits of its capabilities).
5. Relatively-light plate loading.

Why? A good reason in each case. The bias stipulated permits the tube to work at high efficiency and to adjust its bias instantaneously to varying requirements necessitated by the rapid variations of plate source voltage. The appallingly-high r.f. excitation requirement is necessitated by exactly the same conditions: efficiency and varying plate source voltage. It is quite obvious that to sustain undiminished output, more grid drive is required for high plate source voltage than for low. As the plate power source will have to supply twice its "resting" current at its peak demands, it'll have to be designed to supply such current without a drop in voltage. The ample cathode emission and the light plate loading go hand-in-hand. The tube must be capable of supplying four times its normal (or "resting") r.f. power on peaks. It must not be anywhere near overworked under carrier-only conditions; otherwise, it'll never meet the peak load requirements.

Now, why this "four times power" stipulation? Why must the plate current increase in exact pace with plate voltage? Let's consider the classical case. Assume a final amplifier with 1,000 volts on its plate; have it draw 0.1 ampere under normal (light) loading. Now, in series with the d.c. power supply, place an alternator of 707 r.m.s. (1,000 peak) volt output. With the alternator inactive, the stage will draw 100 watts input. Assume 60% efficiency; then there will be 60 watts r.f. power output . . . all pure carrier. Let's start the alternator and consider it as it generates a quarter-cycle (positive-going on initial half-cycle) of voltage. The total plate source voltage on the tube will rise from 1,000 to 2,000 volts. If the other requirements have been met, the plate current will rise from 0.1 to 0.2 amperes. Thus the total plate power input will have risen from 100 watts to 400 watts.

The reader is referred to any of the many texts which explain in detail the division of this power into carrier and sidebands, and which portion is supplied by the modulator (alternator) and which by the d.c. power supply. Briefly, averaged over a full cycle of a sine-wave the alternator will have to supply 50% as much power as the d.c. power supply. This adds up to 150 watts average.

(Continued on Page 11)

TECHNICAL TOPICS

TUNING

LET us consider the tuning of a receiver to a c.w. signal on 7100 kc. The receiver has a single intermediate frequency of 500 kc., then as the front end of the receiver tunes to 7100 kc. the oscillator tunes to 7600 kc. and the difference frequency, 500 kc., is fed into the intermediate frequency amplifier. The beat frequency oscillator is tuned to 501 kc. and a 1 kc. note is heard in the speaker.

Now suppose the receiver is tuned from 7095 kc. to 7105 kc. The oscillator will then tune from 7595 kc. to 7605 kc. and the difference frequency produced with the 7100 kc. signal will feed into the i.f. amplifier at 495 to 505 kc., and as the dial is turned the audible note will (if the i.f. channel is broad enough) start at 6 kc., go down to zero beat at 7101 kc. on the dial, and then rise again to 4 kc. at 7105.

Note that the signal frequency is changed to a frequency which varies on tuning from 495 kc. to 505 kc. in the i.f. stages and that the signal can be brought to zero beat either by tuning the main signal or by tuning the beat frequency oscillator.

If our i.f. amplifier is highly selective and passes a band of frequencies only 2 kc. wide, that is from 499 to 501 kc., then we will first hear the signal when the oscillator tunes to 7599 kc. when the pitch of the note will be 2 kc. and it will disappear when the oscillator tunes to 7601 kc., at which stage the audible note will be zero frequency. Thus with this selective i.f. section, there will be no signal on the other side of zero beat.

In the early days of superheterodyne receivers this was known as "single signal" reception. Obviously the range of the audible note as we tune through a c.w. signal gives us a measure of the selectivity of our receiver.

Now let us consider tuning an a.m. signal on 7100 kc. If the modulator supplies to the transmitter an audio frequency ranging from 200 cycles to 4 kc., then the transmitted signal will consist of the carrier, 7100 kc., plus the sidebands due to the sum and difference frequencies, 7100.2 to 7104 kc. upper, and 7096 to 7099.8 lower sideband. If our i.f. channel is 8 kc. wide, then we can tune our oscillator to 7600

kc. and pass the carrier and both sidebands through the i.f. amplifier. If the i.f. passes a band only 4 kc. wide, the same tuning will pass the carrier and 200 cycles to 2 kc. of each sideband, but if, however, we centre the tuning in say the upper sideband at 7102 kc. or slightly less, we can pass the carrier and the whole of the upper sideband. If the i.f. channel is more selective, it will obviously restrict the range of audio frequencies that we can receive.

The single sideband suppressed carrier (s.s.b.s.c.) signal, as its name suggests, is the same as an a.m. signal which has had one sideband and the carrier removed and the remaining sideband only is transmitted. To make this signal intelligible, the receiver has to generate and supply the carrier.

If we take the upper sideband, 7100.2 to 7104 kc., of the previously mentioned

SOME ABC'S OF AMPLIFIERS

(Continued from Page 10)

age input; at 60% efficiency, 90 watts output, of which 60 watts remains pure carrier and 30 watts constitute "sidebands." This meets the requirements for 100% modulation by a sine-wave.

If for any reason all the stipulated requirements are not met . . . if the r.f. drive is low, if the regulation of the plate power supply is poor, etc., the envelope of the output r.f. power will not follow the modulating sine-wave but will be "flat-topped."

It can be shown that any departure from a sine-wave can be represented by a sine-wave plus harmonics. "Flat-topping," being a process of distorting a sine-wave, produces harmonics of the modulating frequency, a practice that calls upon its perpetrator the wrath of both the R.I. and his fellow Amateurs. These latter two paragraphs are addressed to those misguided souls who reduce r.f. drive to plate-modulated finals in order to reduce the generation of r.f. harmonics . . . and thereby generate a beautiful crop of non-filterable a.f. harmonics that splatter across a whole band.

To sum it all up in a few words: An amplifier is not a Class A stage unless its output waveform is identical to its input waveform. It is not a Class B stage unless its r.f. power output varies with the square of the r.f. grid voltage. It is not Class C unless the plate current varies directly with the plate voltage. Forget about definitions involving bias, drive, and loading; they are but tools to reach an end.

a.m. case as our s.s.b.s.c. signal, then we can make this intelligible by supplying a carrier at 7100 kc. This would require a separate oscillator such as our v.f.o. which would have to be tuned for each signal so that it is usual to supply the carrier of the intermediate frequency (500 kc. in this case) by using the c.w. beat note frequency oscillator to generate it.

Just as in the case of bringing the c.w. signal to zero beat the close tuning to get the correct relationship between the signal and the inserted carrier can be done by tuning either the b.f.o. or the main tuning dial provided the one not used is correctly set. The carrier must be inserted with an accuracy of not less than 10 cycles and thus for s.s.b.s.c. working a receiver requires very stable oscillators for both converter and b.f.o. and a very slow tuning rate bath or main tuning and b.f.o.

—J.A.G.

BOMBER USED FOR T.V. TESTS

A Lincoln bomber, flying at 5,000 feet, was used as a giant mirror in Townsville on 7/1/60 to reflect television signals from Adelaide down to earth.

It was taking part in a unique experiment to establish why very high frequency radio signals can be picked up on occasions long distances from the sending point.

The experiment was controlled by the District Radio Inspector (Mr. Col King) on behalf of the Ionospheric Prediction Service.

The Lincoln was used to test a theory that reception of long distance signals improves when an aircraft is flying over the receiving set.

Mr. King said it had been found that when aircraft was flying a straight level course over the receiving set, the signals improved.

When it banked, the signals weakened and caused what is known as "aircraft flutter."

"This was commonly experienced by television viewers," Mr. King said.

The Lincoln had flown at heights between 2,000 and 5,000 feet, Mr. King said. At 5,000 feet it had caused the strongest signals.

The signals used were a test pattern from Adelaide station, Channel 2, ABS. They were picked upon a set at Mt. Stuart, in the suburb of Aitkenvale.

It appeared that the signals were being channelled through the upper atmosphere at about 5,000 feet above the city, Mr. King said.

The experiment had not been absolutely conclusive, he said, and more tests will be conducted when an aircraft was available.

Using the principle of the plane acting as a reflector to beam the signals down to earth, it was possible in the future that a satellite could be used to relay television programmes from stations thousands of miles away to local t.v. sets, Mr. King said.

The satellite would travel at the same speed as the earth, remaining in a constant position and reflecting the signals to the ground.

—Townsville-Dalby Bulletin.

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Publicity Corner—*

Don't Be Shy About It!

JOE A. ROLF, K5JOK

PUBLICITY HOUND seems to be a pretty common term in many Ham circles. So common, in fact, that anyone sending out a QSL with even a remote resemblance of his beautiful mug is liable to earn the title. However, the unlaudable description falls much quicker upon the local Ham whose call is presented over mass media. Amateur Radio seemingly has retreated to the confines of a few precariously held kilocycles, and anyone departing from the bedlam to do a little bragging has a pretty good chance of being plastered with the publicity sticker. Hams have become, of all possible things, publicity shy!

This charge may be challenged as being untrue and unwarranted, but one has only to do a little rag-chewing to find that he isn't the only one to be misunderstood by neighbors, police, congressmen, mayors, dog catchers, welfare officers, and XYLS. Nor does one have to conduct an extensive survey outside the circle of immediate acquaintances to determine what his community knows about Ham Radio.

For instance, it is well known publicly that the hobby sometimes provides emergency communications during disaster (a fact often quickly forgotten with a little sunshine); that Hams meet in nets to prepare for such emergencies (though nothing ever seems to come from these apparent social gatherings); and that they occasionally have success in sending garbled messages to such remote places as the North Pole. More often, the average Ham is known as the arch villain, by popular vote, of Channel 1 through 28; a joker who enjoys living dangerously in a junked-up basement, with the spider agility to cover a nice neighborhood with wire in nothing flat. During sunspot cycles, he is even known to become vicious, shouting at everybody's kids and leaving his wife.

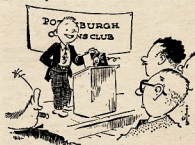
Whether the above assertions are true or not, even to the belief of solar lunacy, they are typical negative attitudes existing in many localities. They exist, mainly because the real cause of Ham Radio has not been made sufficiently clear. For the same reason, the really significant aspects of the hobby are seldom known.

Today, Ham Radio's vastly improved technology and ability to render a superior public service doesn't often demand the limelight of the front pages, or the attention of a learned scientific convention, as in the Golden Age before Pearl Harbor. The almost hidden role of modern Amateur Radio, now reaching through the ionosphere, is not so widely publicized as in the days when the hobby was reaching for Europe. This does not mean that national publicity is non-existent, or fails to meet a definite need, but that the real burden of publicity at the local level has fallen upon the individual.

And why you? For one reason, you're a Ham. For another, you're not the same kind of Ham as the fellow out

on the coast who won the Such-And-Such Award last year. Everybody read about his work during Hurricane Elmiria and everybody was impressed. You felt good, yourself, when you read about it. The hero was a fellow hobbyist, and you understood his problems. It could have been you . . . sitting there in the darkness, fighting fatigue, hoping the long wire would hold during the 90 m.p.h. gale. You can picture our hero struggling, as you would have done, to pass his last bit of traffic before the water-cooled 6V6 disintegrated. This fellow, like you, is a credit to the hobby and everyone ought to love him and Ham Radio too.

Everyone does love him, but he's one in a thousand and you aren't even in the thousand that produced him. Not at all. Not with your rosy 813, beat up receiver, and antenna that's uprooting your neighbor's favorite sycamore. Besides, you're a scandal to the community when your rotor gets stuck. The other fellow never used such language (so the public thinks). He had new equipment, sat in an air conditioned office . . . even wore a grey flannel suit. The other fellow's achievement hasn't elevated you one kilocycle in the eyes of the public living within a second harmonic's throw. They know you and, like many of us, you may be pegged a real dirty-bird Ham.



What to do about it? Either prop up the sycamore and make a mad dash before the grey flannel market takes an upward spiral—or become a publicity hound. You don't have to be a big one; in fact, there is as much harm in being too publicity conscious as there is in not being publicity conscious at all. The important thing to remember is that Ham Radio is an important service to any community and that it's not illegal, though a lot of people think it is. Let the facts be known. Don't whisper, speak up!

Publicity can be grouped, like anything else, into two categories—good and bad. Both are easy to come by, but good publicity can only come about by being a good Ham and letting the good points come to light at the right time, by knowing something about the hobby and telling people about what you know.

It's hardly likely, for example, that any good publicity can come from a rig which tears up every t.v. within four blocks. But then, even good Hams with good rigs have some trouble. If the mess can't be cleaned up, there should at least be an attempt at compromise. Many Hams don't compromise, but consider the F.C.C. as a complaint department for all misdeemeanors. It's the easy way out—that is, until the Commission receives so many com-

plaints it decides to allocate only the infra-red region for Amateur use. The problem which can't be solved with a solder-iron is best solved first hand, rather than by letting the government try it through the mail. People aren't too hard to handle. Recent Handbooks have complete sections dealing with both technical and public-relations aspects of t.v. This material is easy to find too . . . it's the section with no grimy finger-prints or dog-eared pages.

Then too, there's small chance of becoming a full-fledged publicity hound if the rig won't stay on the air long enough to work the fellow across the street, let alone winning this year's Such-And-Such Award. And even if the rig does stay on longer, rag-chewing doesn't make as good publicity as the c.d. nets, traffic, instruction classes, and "Worked All —" certificates we have to brag about. Believe it or not, these Ham activities are newsworthy, particularly in small communities where many papers have as much trouble collecting local news as we do collecting a new state on 220 Mc. Intelligent publicity releases can really put the spotlight on Ham Radio, and you too for a change.

Three years ago a druggist mentioned his Ham activities to a lady customer and within a week had an invitation to speak on the subject at the local luncheon club. Such was the interest that he has been giving lectures at the club every month since. He has not only won the reputation of being a local expert on Ham Radio, but also on Soviet industry, psycho-neurotic disturbances and medieval geography. He has spoken on "Life on the Gobi," passed out Ham literature like a magazine salesman at a Hamfest, and probably has an honorary membership by now.

Despite the prospect of free lunches, lecturing probably is impractical for most Hams. It does illustrate the fact, however, that the public is interested in the hobby and in what the average Ham has to say about it. Mention Ham Radio in conversation and there'll be three or four questions waiting for you. Answer them and everyone will gain.

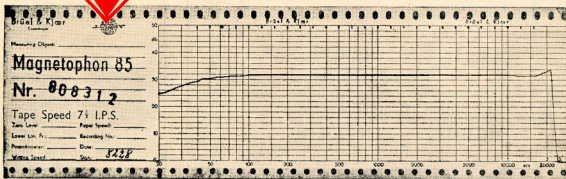
How will everyone gain by being less shy? First, you stand the greatest chance to benefit. The fellow two doors down will be less likely to yell like murder when you put an occasional flutter on his t.v. with the kilowatt full-sail on ten. He'll probably be amazed that the harmonics haven't wilted his Yagi when he knows what you're doing and what you're doing with it. In fact, it wouldn't be a bad idea to let the fellow inspect the rig, even fish around in the innards for loose wires if he wants to. Tell him about the nets you meet, the traffic you handle, the DX you've hooked and you'll no longer be the community crackpot—even though you are a publicity hound.

Respecting the entire hobby, there have been ominous forecasts (particularly in the recent requiems for eleven metres) of dogdays ahead for Ham Radio. This may well be so, unless Amateur Radio convinces the public that it is an active and necessary public utility, which it is. To be convinced the public must be told and the individual Ham can best tell the facts honestly. You're a Ham . . . don't be shy about it.

* Reprinted from "QST," June, 1959.



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Victoria: Maxwell's Radio Pty. Ltd., 269 Lonsdale St., Melbourne. Melbourne Tape Recorders, 255 Elizabeth St., Melbourne.

Queensland: Messrs. Chandlers Pty. Limited, Brisbane and Branches.

South Australia: Messrs. Newton McLaren Ltd., 17-23 Leigh Street, Adelaide.

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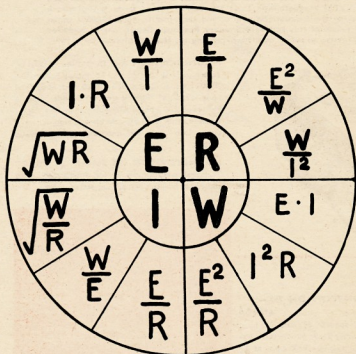
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VOLTAGE-CURRENT-POWER & RESISTANCE REFERENCE CHART.

Short Wave Listeners' Contest for Month of February 1960

HINTS AND KINKS

SURGICAL INSTRUMENTS IN AMATEUR RADIO

The medical supply houses can supply you with all the forceps of differing types that you are likely to need for the equipment which appears to be shrinking in size each year.

Still another source of supply is the hospital disposal section. Here you are likely to pick up instruments which are unsuitable for further use in hospitals but quite good enough for use in the Ham shack.

The instruments you will find most useful are the various types of spring forceps (tweezers) and also "Spencer-Wells" forceps. This latter type can be clipped onto leads and they will lock themselves on until deliberately released and are very handy for lead heat-sinks during soldering.

—S. T. Clark, VK3ASC.

DEMAGNETISING TOOLS

Anyone who owns a soldering gun can use it as a demagnetising apparatus. Pass the magnetised tool through the arch at the tip of the gun and pull the trigger. Slowly remove the tool from the gun area. The tool will now be free of its former magnetic qualities.

—L. Macchiavello, CEIDA, "QST," Dec. '59.

TRANSISTOR PROTECTION

To prevent burning out of transistors because of incorrect power supply polarity, place an ordinary crystal diode in series with one of the power leads so that current will flow only in the proper direction. If the power supply is accidentally connected backwards, the diode will protect the transistors. Of course, the diode should be capable of carrying the total circuit current.

—Charles Curran, K3DQD, "QST," Dec. '59.

AWARDS

WORKED ALL SCANDINAVIA

Västmanland County Radio Society in Vasteras, Sweden, issues the Scandinavia Award to licensed Radio Amateurs everywhere in the world.

"Worked All Scandinavia" is available to all short wave listeners. Rules are the same as below but heard instead of worked.

1. All contacts must be after January 1, 1957.

2. Europe.—European stations have to work the following on any or all bands:

- 50 several stations in Denmark,
- 50 " " " Finland,
- 50 " " " Norway,
- 50 SM15 " " Sweden

Plus all SM Districts 1-7 (116 contacts).

3. Foreign.—DX stations have to work the following on any or all bands:

- 50 several stations in Denmark,
- 20 " " " Norway,
- 20 SM15 " " Sweden

Plus all SM Districts 1-7 (116 contacts).

4. SL contacts are also valid for W.A. Scandinavia.

Do not send any QSL cards. Send a list on all your contacts with Call, Date and Type of Emission (A1 or A3).

Your application must be checked and signed by any club or Amateur.

You can get W.A. Scandinavia either on c.w. or on phone. The cost is 1 U.S. dollar or 13 I.R.C's.

Send your application to: Radio SM15WI, Vilmargatan 2, Vasteras, Sweden.

Zones.—The following numbers apply to Africa: 33, 34, 35, 36, 37, 38, and 39.

You are advised to look in Jan. '60 "A.R." for list of Zones and Countries from which this list is taken. It is the only list that will apply to this Contest. The areas with more than 100 Amateurs are ZSI to S with 5,500, CNE 230, CR7 100, FA 140, OQ5 180 and ZE 185. Many have only one or two scoring.

Following points apply:

160 metre band	.....	20 points each logging.
80 " "	.....	10 " "
40 " "	.....	6 " "
20 " "	.....	3 " "
15 " "	.....	4 " "
11/10 " "	.....	5 " "
6 " "	.....	50 " "

Log.—Standard layout of the W.I.A. Log Book. Date, time, freq., type of transmission, station heard, station working, both RST signals and points claimed. Total points claimed. Each log must be signed to the effect that the entrant has obeyed the rules of fair play. Winners: (1) overall winner, (2) each band, (3) most countries, (4) most zones, (5) highest c.w., a.m. and s.s.b. points.

Go to it chaps and send all your results to M. R. Cox, Flat 1, 37 Boyd Crescent, West Heidelberg, N.23, Vic. The results must not reach me later than 11/3/60. Results will be published in "A.R."

Certificates will be issued for winners and this will not be done until the end of the series.

FEB. PREDICTION CHART FOR AFRICA

Central-South Africa — Short Path															Long Path				
0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Central-North Africa — Short Path															Long Path				
0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Our thanks go to Frank VK3QL for the above chart. The gaps indicate that the maximum useable frequency or the lower useable frequency are very close to that listed, and due to sunspot activity, increase or decrease in MUF/foF2 could quite easily affect these. These predictions depend on activity in the areas and that if the signals are beamed in your direction. Time used is E.A.S.T. African time is from 6 to 11 hours behind us. Check your atlas for local time conversion.

At this stage I would like to thank Tim Mills and his Group for making this Contest possible. They have put a lot of hard work into it, so please enter the Contest and let us know if you want more and if you like them.

—Maurie Cox, Sec., VK3 S.w.I. Group.

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CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

T.V.I.—YOU CANNOT WIN

Editor "A.R." Dear Sir,
What constitutes t.v.i.? The other day a local Z licensee was reported to the Radio Inspector for causing interference to Channel 2. He was simply "pouring in," according to the report.

I might mention the t.v. set in question was home-built from ex-disposal parts and is located about 700 miles from the nearest t.v. station, while the Amateur was approximately two miles distant, air line.

After inspection of his station, he was given a clean bill from the interference.
How far have you to be from a t.v. station before you have to worry about t.v.i.? Also, the distance before you pay the viewing fee of £5?

—Bob Wilson, VK4RW.

"NO REPLY FOR THIS S.W.I."

Editor "A.R." Dear Sir,
Since my letter (Jan. '60) appeared I received one very prompt reply. This was from an Interstate Amateur who enclosed a card that had been received from an s.w.i.

It was a typical example of some s.w.i. reports. It was a commercial card intended for Amateur use. The details were filled in apparently by the use of a ball pointed pen. Firstly, the address could not be read, and the suburb named does not exist. The number was incorrectly set out as it read, "SWL/LXXXX" the letters "WIA" being left out although the s.w.i. is a member of a group. The last figure could have been any of four.

On the back in the details appears a christian name, which does not belong to either of the two Amateurs or to the s.w.i. The next line states, "Very clean all QSO with VKXXX." The contact was held 18 months before the card was sent and was on 40 metres, over a distance of less than 1000 miles. The spelling of the name of the rx was so peculiar that my knowledge no one has ever made one of that type. The report was given as 5, 9, 9, yet it was a phone QSO.

This will be one s.w.i. who will not receive a reply. After this example it is time again to point out to s.w.i.'s that they should make sure their report is going to be of use to the Amateur and that it is a true and correct record. To Amateurs receiving such cards, I suggest that you return them to the Secretary of the S.W.I. Group in the State it came from so that the s.w.i. can have his mistakes pointed out.

My sincere thanks to the Amateur who took the time and trouble to return this particular card.

—Tim Mills, WIA-12052.

P.S.—A note here to the s.w.i. secretaries. There is in existence a very good tape recording on the "Art of Short Wave Listening" (15 minutes). We will be using this tape again in February and after that any Group interested should contact the N.S.W. S.W.I. Group for the loan of this or any other tape we may make.—T.M.

INTERNATIONAL CONTEST

The following information arrived from the Czechoslovak Consulate General in Sydney too late for the January issue.

Radio Prague foreign language broadcasts is holding an International Contest in January and February, 1960, on the occasion of the 15th Anniversary of the Liberation of the Czechoslovak Republic.

Details of the Contest will be announced in Radio Prague's Foreign Language Broadcasts beginning Jan. 1, 1960, and until the end of February. Send your replies—postmarked not later than February 28, 1960—to Radio Prague, Czechoslovakia, clearly marked: "Contest."

Main prizes will be free trips to Czechoslovakia and many other valuable prizes—products of Czechoslovak industry. All correct entries that do not qualify for a main prize will receive souvenirs.

Radio Prague broadcasts in English at the following times and wavelengths:
0030 to 0930 GMT on 25.34 metres (11,840 kc.), 19.78 metres (15,168 kc.), and 13.99 metres (21,450 kc.).

Listeners in the Far East hear a re-broadcast of Radio Prague's North American "Program II." the following day.

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VHF

(Continued from Page 17)

The v.h.f. meeting on Dec. 4 was joined by the S.W.I. Group for our annual swap and auction sale. Much "useful" gear was brought along by members and disposed of by auctioneer Bob 32A. Everyone seemed content as they lugged home their trophies.

Dec. 16 saw that canny pair John 2ZAV and 20A again hiding a tx that left the bounds milling around in the bush in various dead-end tracks. At 9:30 p.m. all hands retired to John's house for the annual Xmas Party. John's XYL, Pat, and the ladies assisting did a sterling job and on behalf of all the members attending I would like to say "Thank you John and Pat."

There was no meeting in January, thereby allowing all hands a holiday and time to get tucked into the Ross Hull Contest on 6--3ASZ.

VICTORIA

Ballarat.—The pre-Christmas rush seems to have caught up with a number of 2 mx operators judging by the number of signals not heard, however some good contacts have been made. Reg 3ZFD in Horsham has been working Max 3ZGZ. The source of "drifting" s.b. signals. The source of signals has not as yet been determined. David 3ZAT (Maffra) has been worked by Brian 3ZBS (Ballarat) and Ron 3ZEE/P at Mt. Buninyons. Max 3ZCW has not been heard on 144, probably working on the d.c. band next door. John 3ZFW and Kevin 3ZHM are active over the week-ends. Jim 3SV in Castlemaine has completed a nice new shack and should be on the job again shortly. There is more interest being taken in 2 mx DX and some interesting skeds are now at the planning stage. Watch this band, it may have some surprises.—3ZEEJ.

WESTERN AUSTRALIA

Several checks were run (VK3-VK6) on 144 Mc. during the 50 Mc. openings, but with no success. However, we feel that a continuation of tests will bear fruit some time. We are not meeting the impossible; it has been done before.

The only local activity at present is duplex working between 2 and 6. However, the lack of activity is understandable considering the high level of 6 mx working.—GBE.

TASMANIA

The weather conditions have been against us for VK3 openings. 7BQ on Dec. 31 worked

DX

(Continued from Page 15)

VK4SS: "Compared to previous Decembers, this month has been very poor for DX at this QTH (Brisbane) and we have had a long spell of thunderstorm activity here (three weeks) with continuous QRN at S7/8 level." Thanks, Al, I did look for HCUU around 0600-0800z and landed him. He was 589 on both 21 and 14 Mc. F.b. on completing your W.A.S.

VK4DO, like 4SS, found the bands difficult with so many storms. We wish you and the XYL all the best for your trip to England and the Continent. Half your luck, Om. Will miss your letters.

VK1KK has worked 243 countries. His antenna is a three element rotary beam. Good going, George, and hope you get that Y810 QSL.

VK1OT. Thanks, Max, your note much appreciated. He says 5N1GW in Catmandoo, Nepal, has been around 1200z, also HA8WS is on 1430z Kc. s.a.b. at about 1800, and XZ2AD on s.a.b. 14 Mc. at 1200z. QSLs for 5N1GW go to Box 9136, Washington, D.C., U.S.A.

L3065: "During the month the band conditions have been pretty poor on both 15 and 20 metres, although signals from the islands in the South Pacific and in Japan have been heard most nights. Signals from India have also been heard regularly, but at low signal strength. Central Americans appear each day about 0530 to 0700z and again at 1000z on 20 metres."

My thanks also go to WAKVX, VK1AGH, VK1QUL, VK1YD, VK1KR, L2092 and BERS-192 for much of the material used in these notes.

WAKVX notes will be sadly missed next month. The fire mentioned earlier in the notes was a terrific one. Don in particular and the DX Amateurs in general. Let us hope that promised help will soon have him back in business again. In the meantime, chaps, I would like you to make an effort and send along any news that will help these notes. 73 for now, VK2ZR.

3ZCG/V at Sale for the first opening to Sale. 3ALZ was also QSOed by 7BQ and 7LZ. 7FP who is now on from the Drone at Launceston was out and 7LZ had to rush away. 7ZAK is being contacted to arrange skeds between north and south VK7, also believe the ex-VK7 is going to operate from Mt. Wellington when power is available. 7RL at Stanley is going to operate again this year and possibly 7ZAA at Burnie.—7FP.

288 MEGACYCLES

Victoria.—Ron 3ZRH has been running skeds with 3AUX and other Melbourne stations with much success. Rumor has it that he has also broken the previous 1 mx record again. I will find out the details again next month.

T.V.I.

On many occasions during the previous month, Channel 2 stations have been logged Interstate. Probably the funniest story to come out of it all was about the Melbourne woman who rang up ABV2 and complained about the poor quality of the picture transmitted one morning. They told her that it was ABQ2 which she had been watching. But all this has a serious side. All these openings should be logged if possible and the information used in our fight for Channel 1. Is there some enthusiastic person who could accept the responsibility of collecting these reports in case they are wanted in a hurry?

GENERAL NEWS

Neville 3ZGH has been holidaying in VK4 and has been heard from 4ZAX on occasions. 3ZCGM was out of C.G. control and doing good business with the DX. 3ZJE mobile with a transistorised power supply and modulator, running 40w. to 60 Mc. and halo. Very nice signal John is putting out. Using 2N275 in mod. and d.c. converter. One nice contact was when he was portable near Apollo Bay and worked 3ZPM near Horsham, 180 miles, Sigs. S.B. 3ZCG heard 3ZDK 20 wpm 9 while portable. S.B. 3ZDU portable South Aust. worked 3ZDO/P VK1. 3ZGF has a quad up 39 ft., thanks to ZZZO and Maurice L3085. Quite a few new calls heard around Melb., 3ASB, 3RV, 3AMA, 3ZHW, 3AE returned again and 3JE. Some of these are OTS of 50 and 56 Mc. We even believe that Snow 3CW is making his way down the band from 54 Mc.

Some unusual signals have been heard at 3ZGP's location earlier in the month around 32.5 Mc. peaking up W. and S.W., running time and on another occasion modulated but unreadable, plenty of QSB as well. Anyone hanging around on that frequency these days?

Some shocking operating procedure has been noted during the DX of the last month. Should look to your procedure chaps. Some of those over modulated, spluttering and pile ups on frequencies leave much to be desired. Makes a lot of noise alright, but spoils an awful lot of fun for other less fortunate chaps who happen to be QRMed by your signal. Particularly in crowded locations. Let us all try to keep up your techniques and remember the Amateur code.—3ZGP.

QUEENSLAND

Congrats (or otherwise) to Kevin 4ZDK, believe he is starting to consider the advantages of XYLs. Will we see you again on six soon? Max 4H1D running QRN for a few months, he is shifting QTH. Yes, really pulling things down and moving a little closer to John 4PU and Europe, two miles isn't it? So John you will need a mighty big suppressor to keep local QRN now. To all readers of this column, all good wishes and good DX for 1960 from us up here in VK4.—4ZBI.

WESTERN AUSTRALIA

The Xmas Barbecue was well attended and enjoyed by all. There is a suggestion for a "Sambing" Radio Society, W.I.A. and V.h.f. Group Barbecue to replace the Annual Radio Society function which usually takes place at Crawley annually. It has become too much of a financial burden for our group to carry.

Glad, XYL of 6ZAV, is convalescing after a major operation; she is making good progress. All the best, Glad. 6CL is threatening to return to 6 mx and has been working cross band—7 Mc. to 8 Mc.

Who lost the crystal out of his crystal set on the last Fox Hunt? Shame!

Don 3ZGK, Len 3ZCT are home on holidays until March. Noticed some VKs become quite excited (for a few minutes) on hearing Don's call, send him a QSL. It is difficult to work VK3 DX from the West. Won't they talk to you, Don?—GBE.

PREDICTION CHART, FEB. '60

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21	14	7	0	45	28	21	14	7	0	45	28	21	14	7											

NOTES

NEW SOUTH WALES

The December meeting of the N.S.W. Division was held at Science House, Gloucester Street, Sydney, on Dec. 18, at which a rather depleted attendance of 42 members were present. No doubt the proximity to the holiday period had some effect to the numbers attending. The President, Dave 2EO, opened proceedings at 8 p.m. and announced that the bulk of the meeting would be of a social nature where members would have ample opportunity to mingle and exchange views on the varied subjects Amateurs hold.

Discussion was held on the desirability of including technical articles in the monthly bulletin, but it was pointed out the increased cost this would entail, the Division refused.

It was decided that the January Council meeting would be held prior to the next general meeting of the Division.

Detailed reference was made by the members of the social committee (2ACD and 2MP) on the Convention held on Jan. 30 at Dural. The meeting closed at 8.45 p.m. for coffee and the usual get-together.

HUNTER BRANCH

It was rather unfortunate that the I.R.E. decided to hold their dinner on the same night we always have our break-up party, but those who deserted the ranks of the Amateur may have gained around the waist, they certainly missed probably the most entertaining and enlightening lecture of the year. Les 2AC certainly was in good form even though his subject was s.b.b. however being so simply presented it gave quite a few die-hards a lot of food for thought. Those present were 2ANG, 2AFA, 2AFC, 2ZRR, 2ZL, 30 at Dural, 2ZMO, 2ZL, 25F, 2AQR and associates Sutherland, Foster, Gray, Fyfe, Stobbs, Richardson, Bailey, Mullen, Lindsay, Finlayson and Sumner. Frank 2FX was a new member was stranger (to me) so come again chaps. Frank 2QL will be this month's lecturer—subject being Ionospheric Predictions.

Bill 2XT returned home for Xmas, believe it took three days to get him through customs. I stayed home all over Xmas holidays expecting Bill to bring me a box of Yankee cheroots. Wouldn't take them now even if offered as I believe he has been on s.b.b. anyway, Gordon Sutherland has smoked them all. Father Xmas departed from Gordon's office leaving behind stereo hi-fi stuff then went to Stuart's (2ZDF) abode with the same intent. That ought to keep the kids quiet.

Varley 2SF joined the painters and decorators to unionise over the holidays—2ZL please cope. Believe Frank 2FX cross-eyes are now square through excessive tv-servicing. Rodney 2CN is now sporting a gigantic tooth, nearly as big as the one on the other side. How's that, Rodney? John 2QX still brass pounding.

Gordon 2CI also waving the paint brush around. Harold 2AHA quite an expert in window dressing. Ernie 2FP now ensconced in his new workshop—cum experimental laboratory. Apparently one joker didn't read my last notes re leap year as Les 2RJ has been squiring a

blonde here and there. He warned mate and stuck to that new front end you have built. Stan 2ZDL still awaiting that full call whilst his mate Stuart put up a new antenna to assist migratory birds. Bill 2ZL is now no longer "Forever Amber," replacing the aforementioned bulb with a five-watt. Several reasons have been given: Using too much current, traffic halting awaiting the red light, tv. owners know when he is on the air, etc., etc. Take your pick.

Bill 2XT now Commodore of the Bull St. Yacht Club. Lionel 2CS still on 3.6 a.s.b. and understand No. 1 son is following in his footsteps and the Silent Service. 2FP tried to work 2XT whilst the latter was in the States with the feeders twisted in the wrong places. 2ZDF worked 2AHR on 144. Bill 2ZNW also in the contest. Bob 2AQR can vouch for the efficacy of r.f. on choke-vents. Associate Frank Stobbs now has a job for life once a year at washer-upper year at our Xmas Party, which this year was better than ever with plenty of eats and nice hot coffee.

Next meeting, boys, Friday 12th, at usual rendezvous. See you there, 2AQR.

APPRECIATION

Essie, XYL of the late "Pop" Lewis, VK2AHL, was so overwhelmed with cards and letters, that she could not find it impossible to thank individually all those kind Amateurs. Please accept this as her thanks.

CENTRAL COAST STATE

The Christmas meeting was a social occasion held at the home of Major Stuart. Most again express our gratitude to Ruth, XYL of 2RU, whose magnificent supper continues to delight us.

During January, Fred 2ALA was caravanning complete with mobile, where he headed for VK3. Just inspect the caravan, boys, it's made by a craftsman and it's labelled "Sea Kew." Fred's signal from East Gosford is generated by a Gelo and 807, pi-coupled to a wyndom, also H.R.O. receiver. Holidaying at The Enchanted Treetops, 2ALG is a mobile armed with good mobile signals, also near-by, 2VL.

Monday nights at 2030 on 3635 Kc. our group meets to swap news. We welcome Trevor Huntley of Woy Woy who has passed his ticket and is awaiting a call. This fellow should be good at smoke signals as he uses them in the Post Office as his daily work. Rex 2YA begins teaching his class in February and may stir up some activity among the amateurs. Reg 2AI not so active lately due to a rush of work. However, a new a.m. rig with 813 is under construction. Turn down your r.f. gain now, lads. His s.s.b. mobile was heard from the Riverina recently with a very good signal.

New call VK2MV, Geoff Morris, has not commenced transmission yet, but will be on soon when the bedroom furniture is finished. Alec Swinton should pass the test soon. Time for study is hard to find when there's a passion fruit crop to harvest. The same might apply to oranges when considering certain other members of the Gosford Radio Club.

Your scribe, 2ON, did not notice any 6146s in his Xmas stocking but hopes Santa may have left an 807 here or there. Work on a band-switching all controlled converter continues. Was anyone at the one-way converters? Crystals appear to be no problem now the etching process is understood. This is a new method taught to shift frequency up to 100 Kc. at 7 Mc.

2LX inactive due to too much t.v. work, likewise 2RU. These chaps' working hours are worse than the secretaries in the Government, the map with his 80, 40 and 15 metre signals.

Mention might be made here of the wonderful Tasmanian hospitality. The writer spent fortnight there recently and had the pleasure of meeting Hans in Laureston, Brian, Zeehan, Queenstown, Bronte and Hobart. If you want to see rugged alpine scenery, I can recommend the department of Tourism and I hope Leon 3JP is there to tell you about this interesting copper-mining town.

VICTORIA

Victorian Division zones and affiliated clubs have given a last reminder about the perpetual trophy to be awarded to the leading zone or affiliated club team in the N.F.D. which is to be held on 13th and 14th February. The competing teams will enter in section 10.

The claimed score is to be forwarded to the Divisional Secretary at the same time as the log is submitted to the Federal Contest Committee. The Secretary will contact you with the F.C.C. The winners are to hold the trophy for a period of one year.

The first general meeting of the Division for the year will be held on Wednesday, 3rd February, at the Radio Theatre, Royal Melbourne Technical College.

NORTH EASTERN ZONE

This zone is dead and at the last convention eight of us buried it, until its resurrection day in the distant future. Those who attended were the President, Vice President, Zone Correspondent, 3AFF, 3HZ, 3AOB, a visitor from the Marist Bros. College at Kilmore, and associates from the Hastings area.

Fred 3YS turned his car over at Kilmore and consequently did not arrive. Max HU sent a telegram saying he would be unable to attend. Just as we were about to leave there were two more of the two G men from Radio Australia arrived.

Peter, Sid and Bruce still have nightly skeeds on six with Sid still working JAs and other Australian DX when the band is open. Keith 3JC watched ABQZ on t.v. one afternoon, the picture was spasmic to say the least, but it was still a picture; the sound was excellent. It came on the basis of his army and he would have liked to turn the array around and see if the picture improved. Six metres have been wide open at the time. Ken 3KC has a purse of construction to take a three-band quad.

MOORABBIN AND DISTRICT RADIO CLUB

At our January meeting, held on 15th, in preparation for the new year, 30 max 3x hunters ED 3EM gave us an excellent lecture on loop antennae and mobile gear suitable for such hunts.

This year we have drawn up a syllabus of events in which is included social as well as all Ham activities. We propose having a barbeque in April, picture nights at the Club, and visits to various places, amongst others, to the Herald-Sun, D24, and Television T.x's. These are as well as our monthly meetings.

Our committee member, Bob 3NZ, participated in the 1960 New Year Dayport yacht race and after a very good crossing, made third place. Congrats., Bob!

Our latest honorary member, Chris 3AXU, honored us with his presence. His party was welcomed and many a nice yarn swapped. We are always pleased to welcome new Ham who may be travelling through Melbourne, Country, and Interstate. Ham's late note of my (3LC) telephone number, BY 3918, at any time of day or night.

Hope you have all started 1961 in fine style.

— — — —

QUEENSLAND

BRISBANE AND DISTRICT

Sorry about the lack of notes last month but I'm afraid I slipped up on my dates; I should have remembered that the dead-line date for "A.R." was a week or so earlier at Christmas, but I forgot. In any case, I apologise and won't let it happen again.

The new year with us was fast approaching the "off period" when the sunspots calm down for six or seven years and the enthusiasm of the Ham fraternity seems to die likewise. There are still a few good QSOs to be had even in this "off period" and if we just stay off the air, the next I.T.U. Conference will cut our hands down even more. Talking about the I.T.U. Conference, you have possibly heard about the ill health of our Delegate to Geneva, Johnny Moyle. I know that John has our hopes for a quick recovery.

Our Christmas "get together" was almost perfect; the site was the best yet, the food and service was excellent and the liquid refreshment was served at just the right temperature by a uniformed drink waiter. There was only one thing lacking to make it perfect—there was no hand out of the money. At the November general meeting a show of hands showed close to twenty intending guests and we expected a half dozen or so others. We entered for twenty-five, and there were we mistaken. Oh well, we'll know next time.

SILENT KEY

It is with deep regret that we record the passing of:—

VK5LW—Ross Kelly.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

NATIONAL FIELD DAY:

Date: Saturday and Sunday, 13th and 14th February, 1961.
Duration: Saturday 1800 to 2300 hours, Sunday 1000 to 1800 hours.
Rules: See January "A.R."

FRENCH CONTEST FOR 1960:

Date: CW—1900 GMT, Feb. 27, to 2100 GMT, Feb. 28.
Phone—1300 GMT, April 9, to 2100 GMT, April 10.
Rules: See February "A.R."

A SELECT LIST OF BOOKS FOR HAM ENTHUSIASTS

★ THE RADIO AMATEUR'S HANDBOOK, by Amer. Radio Relay League	46/3 and 2/9 post.
★ RADIO HANDBOOK, 15th EDITION, by William I. Orr, W6SAI	85/6 " 3/- "
★ V.H.F. HANDBOOK, by William I. Orr, W6SAI	34/3 " 1/6 "
★ BEAM ANTENNA HANDBOOK, by William I. Orr, W6SAI	32/6 " 1/6 "
★ A.R.R.L. ANTENNA HANDBOOK	31/- " 2/- "
★ "CQ" ANTHOLOGY—THE BEST OF "CQ" 1945-52	20/9 " 1/6 "
★ COMMAND SETS, by "CQ"	15/6 " 1/3 "
★ NEW SIDEBAND HANDBOOK, by Don Stoner	31/- " 1/9 "
★ SINGLE SIDEBAND FOR THE RADIO AMATEUR—A.R.R.L.	24/- " 2/- "
★ MOBILE MANUAL FOR THE RADIO AMATEUR—A.R.R.L.	38/6 " 2/- "
★ NEW MOBILE HANDBOOK—"CQ"	31/- " 2/- "

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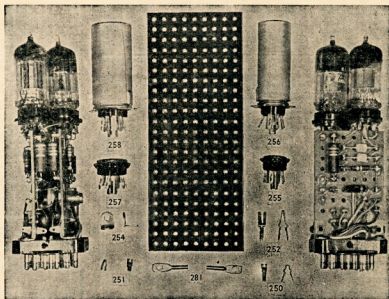
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Creek; Col 5CJ brought along some slides taken at the Warrnambool Convention, which brought forth sundry comments from the darkness, and the usual Xmas goodies were put on a thoroughly enjoyed evening. I received an invitation to attend, but the front wheel of my tricycle had a puncture so it was a bit far for my non-motorised transport.

Tom 5TW was missing from the Xmas meeting, but has been heard as usual on 40, so all must be well. Stuart 5MS is still chasing the rare and elusive 50 Mc. band, and is even tuning the bands when he is at work, to ensure that nothing is missed. Claude 5CH was another absentee from the Xmas meeting, but he has been heard as usual. Probably could not get out the front door for the disposal parcels from VK3J.

Leo 5GJ is not breaking any records on the air but I understand he holds the record for story-telling (both true and false). Erg 5KU is now back to the daily toil and is feeling a little collar-proud, so much so, that his well known c.v.s. signals have not been heard here for at least two days. Don 5ZBG is still living up to his call sign and has nothing to report. I think it is none the less a pity to lose a little detective work and find out the reason for the inaction. Cherches la Femme? Pardon my Latin. Col 5CJ is at the moment of writing commencing his column, and will now really commence work under the supervision of the XVI. He now has a tower for his own use and will use on the unmentionable frequencies.

Woe is me. The terrible twins, Athol 5LQ and Lionel 5LB, are looking for my blood and I believe I shall be able to tell them I have been heard on 21 Mc. Athol offered to buy my receiver and Lionel offered to buy my ears, but they could not try adding to harmonics and overtones and such technical know-how. When last seen they were armed with s.w.r. detectors, harmonic detectors, radiation detectors, and finally a detector. The other members of this unholy alliance, Jack 5LN, esd quite bluntly to use the lie detector first and then the other. Oh dear! What a business could be! My faith in human nature is fast being undermined.

Graeme 5XV is at the moment attending a military camp at Alamein, a few miles on from Port Augusta, whether connected with radio I do not know. However, I can only say that he is a good soldier.

Comps 5EF and Les 5AX, from the hamlet of Gawler that will make them buck) attended in an official capacity the meeting of the Les 5AX and Les 5AX, and the other two were given their own distinguishing name and my espionage agent tells me that Les finished up with a double D. (Dunbar) and Les finished up with Open the Daw, Richard! Oh I know its weak, but it made you slightly smile.

Notice that the VK3 notes are being compiled by ex-VK5RG, Rob to you. I thought they were an excellent example of just how Divisional notes should be written. Short, to the point, with an entire absence of heifer dust so noticeable in the VK3 notes (what am I saying!). Anyway, nice work Rob, and when you finish Jack you can delete the VK3, providing that it has not collapsed by then.

Talking about Divisional notes, the VK2 Hunter Branch bloke scared the daylight out of the VK2 with his mental gymnastics. I had quite forgotten the fact and but for his warning would have been a certainty to have been caught flatfooted. Oh Dear! I wish a nuisance of a VK2 branch member, who said I had to be behind the door when everything was handed out!

Compliments in the order of the day to Colin 5XY, who topped his first-year medical at the University. Nice work, OM. Oh, and by the way, what about a free diagnosis, cannot sleep, and thinking of Editors and the cruel things they say. Treat them with ignore. Have you tried it?

Hughes 5BC has been hard at work building a one-eyed monster and I believe it was given a good try-out on the shield circuit transmissions and came through with flying colours. I wish to see that monster, Otto!

Fred 5MA is still on the rotary hoe and if he stays there much longer he will have to have a rotary hoe separately. He is doing a hard work with the temperatures around the 100 for days at a time and we can quite understand that the call of "red" is at the moment very faintly heard by Fred.

Harry 5KW is another one who seems to be coasting along with radio these days, but the big news with him is that the Jolepie has been heard. I don't know if it is true or not, but if it is, it is a relief to the entire population of Renmark, who were in a complete nervous state to decide just what the final colour would be.

OBITUARY

ROSS KELLY, VK5LW

December 29, 1939, saw the untimely passing of Ross Kelly whilst at Moana Beach, a very active in recent years on the air. He was a member of several Amateurs bands, due to his commitments, but well known throughout Australia, and the DX world back about ten years ago. He was a member of the VK5 band and suddenly will shock not only the VK5 boys, but also Interstate Radio Amateurs who will remember the theory value of Ross.

He was an ex-VK3 Councillor, and the first auctioneer of the VK5 buy and sell nights, at which he held his audience in the palm of his hand with his bubbling good-nature and his ready wit, passing so at all times ever ready to assist the cause of Amateur Radio in which he had such a firm belief.

Ross will be missed from the ranks by many, who will mourn his passing, and we extend to his sorrowing wife and family our sincere sympathy in their sudden and sad loss.

It has finally settled down to a red, grey, orange and black I think.

Tom 5TL is working on a 144 Mc. converter which he expected to have finished this time last year, with extreme luck it will be ready this time next year. By the way, and thanks to his Morse Code class that he conducts on 3.5 Mc. each Thursday, the reason for the late start on this project was that he was still gardening at the starting time and had lost his compass, which meant he could not find the back door through the undergrowth. I have formed the impression that he is not an enthusiastic horticulturalist.

Don 5KD at the moment of writing is putting the final touches to his transistorised rig and also to his good signal on 10 Mc. He told me that he was having a little trouble with f.m. on that band but it was not noticeable at my QTH. I am having him screened and see if he can find it. I don't think he does, he sounds like a gentleman to me!

Tom 5AQ is keeping the flag flying up at Leigh Creek and expects to be down here on his holiday in about a week. I have heard of him. If I had known earlier I would have got him to bring me down some coal in his pockets. They don't call me Scrooge Parsons for nothing.

Wally 5DF not heard much here lately. I thought when the beam went up we would be putting fuses in the aerial to receive him. In the course he could have lost his direction and be pointing the beam at VK3, but then who would want to point anything at VK3?

George 5EC sends his regards to all from Ceduna and adds that beside the normal afflictions of life, he now has Gordon 5XU over his head. I have heard of him. I don't know if he is, but what's mother-in-laws always say and then proceed to stay for a couple of months. Silence. Here's my XYL.

My cup of happiness was filled to the brim over Xmas by the fact that I received a Xmas card from none other than the Editor of "A.R.". However, the contents of my cup quickly turned sour when I read the enclosed note in the envelope. It appears that I forwarded to the magazine a circuit of a power supply from a VK5 contributor which, in the words of the aforementioned Editor, "How in the name of the work without the VR tube being earthed." Also "Sub-Editor, Bah!" and last but not least, "Don't try and lose the circuit because it has been christened." It appears that the staff of "A.R." has been sworn in as a witness.

The crowning and deepest blow of all was the closing sentence, "I hope you will be able to never let me see any of their circuits because it would never get on the air." Never being usually stuck for words, was a bit taken aback and can only say that I did not realise that my duties for the magazine included that of Technical Editor, and also would someone please tell me that the tube cannot be earthed. Anyway, I have had legal advice and I now throw down the gauntlet. Either the Editor goes, or I do. No joke, I will take my own life in my hands.

heaped upon me by one who has sunk so low that he allows Short Wave Listeners to take away his old chassis and junk, rather than tip the local dustman. Once again I say, to the Editor of "A.R." Get out of the office, one Higginbotham — Higginbotham — Higginbotham — or whatever your name is.

TASMANIA

We appreciated the call from VK3WI on the Sunday morning before Christmas when greetings from those present were conveyed to us down here, and a tape from our Federal President, played to the South-west. It was notable for the number of mobile and portable stations operating. Snowy 7CH on the yacht Moorina, and Bill 5TV on the Zander, were heard from Port Davey. Keith 7RX on the Vera has several times been mobile on the Derwent estuary. Ken 7KA has been portable at Howley on the North-West coast. Lon 7LJ has been portable at Cremorne, and Jack 7JB has been portable at Cradle Mountain. Consistently good communication was maintained with all these stations from home stations.

We have also been pleased to welcome several mainland Amateurs in the past month. Archie 5XW, who has been in Hobart since his departure in Hobart after having landed at Devonport and toured the State to Hobart via the West Coast. In early December, further depleted our reserves of flat-head and trumpeter in Derwent, and I was pleased to entertain him one night at my QTH. He was a member of the South-west and has been holidaying down here since 17th December, and we were pleased to meet him at our Xmas party. The South-west was at the meeting, we welcomed Jim 7JO and Les 7KC, both of whom will be resident from now on in Hobart. Harold 7MZ was also a welcome visitor.

The V.h.f. Group have asked me to remind enthusiasts that the Athol Johnson Memorial Contest for Intra-state v.h.f. stations on the 50 Mc. band and above will be held from 0001, 20th, to 2359, 21st Feb., '60. Interstate contacts will be appreciated too, but such contacts cannot be used in the contest.

Roy 7ZAO was seen scurrying around in early December arranging for the printing of QSL cards, following his four VK4 contacts on the 50 Mc. band the previous night; good show. He was seen again on the 21st, and on other evening to make his first phone contact outside VK when he worked a KRR. Joe 7B/7C was seen on the 21st, and he was seen at least that is how he felt after he had helped in conveying 20 tons of television station equipment into the tx building after the carters had dumped the lot on the front gate. Joe has been working six days a week supervising equipment installation and expects soon to be working seven days a week to have the station radiating by the announced date in May.

Ted 7EJ has again landed the job, unopposed, of Federal Councillor, congrats, Ted.

The members from the South who contacted the Federal Council have been busy, have started on the task of ascertaining the results of the VK/ZL contests, and hope to have the results published in the March issue.

Keith 5XW has been busy, and spent two weeks in mid January down at Dover. Bruce 7RM has his rig working on the 21 Mc. band now and is putting out a very readable signal at my QTH. The front gate has his system on modulation adopted by Amateurs, mainly in VK3, and it shows what negative clipping and negative Miller can carry in the limits without splatter. Max 7CA has been in the news by receiving Brisbane television in Launceston.

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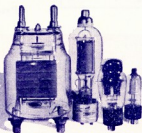
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